

DUNKARD CREEK-15NovY2K10

Geologist Lee Avary joined our UMRA board last summer after Lee retired from WV Geological & Economic Survey. Pasted below is my email exchange with Lee, re Wall Street Journal article also pasted below.

----- Original Message -----

Ex. 6 - Personal Privacy

Sent: Sunday, November 14, 2010 6:39 PM
Subject: Re: Shale oil

Ex. 6 - Personal Privacy

I think there is a fair amount of interest in the Upper Ordovician Utica Shale (aka Reedsville or Martinsburg) but I think it is too thermally mature for oil production here. There was a report last week of a successful CNX Utica gas well in Belmont County, OH.

The older and deeper rocks are not very thoroughly tested in WV. There are only 11 wells which penetrated basement rocks; 3 of those are in Mason County. Before the interest in the Trenton-Black River (limestones and dolomites)(Trenton is just below Utica) in the late 1990s-early 2000s, there were only 30 WV wells which penetrated the Trenton. That number about doubled with the recent interest.

The Trenton-Black River (TBR) is less and less thermally mature to the NW; there is oil production from the TBR in NW Ohio, NE Indiana and adjacent Michigan.

There are other deep shales of Cambrian age which might have some gas production potential, but these rocks have not been extensively tested.

Is this more of what you're looking for?

Ex. 6 - Personal Privacy

Sent from my U.S. Cellular BlackBerry® smartphone

Ex. 6 - Personal Privacy

Date: Sun, 14 Nov 2010 13:29:32 -0500

Ex. 6 - Personal Privacy
Subject: Re: Shale oil

Ex. 6 - Personal Privacy ok re your Marcellus comments. BUT!! Are there other shale whatever deep strata in WV-PA-NY area, that might produce oil?? I understand the natural gas liquids co-production with gas shales. I would like your observations here, however, as to whether, in your opinion, in addition to the current Marcellus shale gas production, we might at some future time face oil production, and natural gas production, from other deep strata in WV-PA-NY eastern US area? LEE, I would like to put your thoughts out here to my DAILY UPDATE!

----- Original Message -----

Ex. 6 - Personal Privacy

Sent: Sunday, November 14, 2010 1:11 PM
Subject: Re: Shale oil

Ex. 6 - Personal Privacy

There are hydrocarbon liquids (lighter gravity than oil) associated with natural gas (i.e. propane, ethane, butane, iso-butane) on the northwestern side of the Marcellus play area (i.e. Marshall and Wetzel counties, WV and Washington and Greene counties, PA. Here the Marcellus is less thermally mature, still in the window for preservation of both gas and these liquids. However, I don't believe there are places where the Marcellus is within the oil window. The Bakken in ND and some of these other shales are producing oil.

If you look at my presentation at the WV Water Conference, found at:

<http://www.wvwaterconference.org/docs/Combined%20Presentations/New%20Gas%20Well%20Extraction%20Methods%20Does%20Marcellus%20Opportunity%20Mean%20Water.pdf>

particularly slides 33-35, you will find some information about thermal maturity, the gas window and the oil window. The map that is supposed to be in Slide 35 appears to have "gone missing" along with those in Slides 18 and 30. I'll ask the folks at NRCCE to look in to this and try to get them up there. I hadn't looked at my presentation on the website before, so this was a good opportunity to do so and realize some of my maps aren't showing up.

Wet gas (containing these liquids) must be processed in order to remove the liquids so that the gas conforms to pipeline specifications. Dominion operates (and has since the early 1900's) a large plant at Hastings, Wetzel County, for this purpose and there are other gas processing plants being constructed now or recently constructed to process Marcellus wet gas

So, bottom line, the Marcellus is not considered an "oil shale" but there are places on the northwestern side of the play where "wet" gas is produced from it.

Ex. 6 - Personal Privacy

On Sun, Nov 14, 2010 at 12:24 PM, Ex. 6 - Personal Privacy see pasted below (also attached). As I recall, shale oil is being developed in North Dakota???!! Further, my question to you is do we have such deposits in WV-PA-NY, ie, same area now facing Marcellus gas deposits development??

SHALE OIL-WSJ-13NovY2K10

WALL STREET JOURNAL, Saturday 13 November 2010, page A3, US NEWS:

<http://wsj.com> -- Yes, there is no www!

New Oil Patches Sprout Across Nation

With Natural-Gas Prices Low, Drillers Set Sights on Crude Locked in Shale; Estate-Planning in a South Texas Town

By DANIEL GILBERT

KARNES CITY, Texas—A surge in oil drilling is transforming this rural south Texas community—and with it, American energy production.

Daniel Gilbert for The Wall Street Journal

Drawn by high oil prices and new technologies that make it possible to extract oil from the dense rock that lies beneath much of the region, major energy players are raining cash on the county and its residents.

A similar wave is beginning to visit parts of North Dakota, Colorado and west Texas. The surge in onshore oil exploration is helping reverse the decades-long decline of domestic oil production, which increased slightly in 2009 for the first time in more than 20 years.

For much of this decade, energy companies pioneered new drilling technologies that allowed them to recover natural gas from a subterranean rock called shale. By drilling down and then out laterally, companies were able to exploit greater areas of the shale. And by injecting massive doses of water, sand and chemicals into the ground, they could crack open the gas-bearing rocks, allowing gas to flow to the surface.

The twin processes unlocked such vast gas deposits that it has led to a glut, depressing the price of natural gas by 21% in the last year.

Victims of their own success, energy companies began eyeing the more attractive price of oil, which, at \$84.88 a barrel after Friday's price drop, is still up more than 11% in the past year. Now they are deploying the same drilling technology to shale formations containing oil.

Hot Spots in Hunt for Domestic Oil

States with significant onshore rig activity in shale formations, ranked by increase from Oct. 2009

Texas

Shales: Barnett, Eagle Ford, Haynesville, Permian

Rig count Oct. 2010: 711

Increase: 300

North Dakota

Shales: Bakken

Rig count Oct. 2010: 138

Increase: 83

Colorado

Shales: Niobrara

Rig count Oct. 2010: 69

Increase: 39

Louisiana

Shales: Haynesville

Rig count Oct. 2010: 131

Increase: 24

New Mexico

Shales: Permian

Rig count Oct. 2010: 68

Increase: 20

The shale boom won't begin to end American dependence on imported oil, but industry experts say it is driving a significant and potentially enduring shift in the way oil is produced domestically.

"It's a game-changer for U.S. oil production," said Bill Durbin, head of global markets research at Wood Mackenzie. "The U.S. has always been perceived to be a very mature oil province with relatively little prospect for growth. Now we're seeing the declines in production being arrested by the increase in unconventional oil."

Nationally, the balance between oil and gas exploration onshore has tilted heavily toward oil. The number of oil-seeking rigs has nearly tripled since June 2009, and now makes up 42% of all rigs in use, a prevalence not seen since 1997, according to data compiled by oilfield-services company Baker Hughes Inc.

Among states, Texas has seen the greatest increase of rigs in the past year, adding 300, a 73% increase. North Dakota added 83 rigs in the last year, Oklahoma gained 71, and Colorado picked up 30. Analysts at IHS Cambridge Energy Research Associates have identified 20 significant shale prospects across North America.

Industry executives and analysts say the growth is likely to continue, at least as long as oil prices remain over \$70 a barrel.

"It allows us, during a time when natural-gas prices are somewhat suppressed, to focus our efforts on areas where we can bring in a lot of crude oil," said Floyd Wilson, chief executive of Petrohawk Energy Corp., which has been drilling for oil in south Texas.

Karnes County lies at the heart of the Eagle Ford Shale, a thick layer of dense, oil-and-gas-bearing rock that sits between 5,000 and 11,500 feet beneath the surface. The formation stretches across more than nine counties, but Karnes, population 15,000, has the most rigs drilling for oil: 13 in October, according to RigData, a company that publishes land rig counts.

In town, where the predominant livelihood has been farming and ranching, the rigs' presence is unmistakable.

"Oil & Gas Boom!" reads a flyer advertising an estate-planning session, taped to the door of the county courthouse in Karnes City. The message is apparently intended for people like Paul Bordovsky, a retired druggist who netted a sum "well into the six figures" after a well on his 642-acre ranch produced nearly 34,000 barrels of oil in its first 40 days before it was temporarily capped—far more than he ever made raising purebred Charolais.

The courthouse itself teems with scores of industry hands researching land titles. Their arrival—along with rig workers—is swelling demand for lodging. Telia Diaz, the enterprising owner of the "New Wave" hair salon in town, converted an empty lot into an RV Park three months ago. The campers now provide more income than her salon clients, Ms. Diaz said, and she is planning to open a second park.

The fossil fuels contained within the shale in Karnes County were not unknown. In 1966, John Braudaway was working as a roughneck trying to kill an out-of-control well spewing oil and gas. It was, he thought, a sign of a productive well. But Mr. Braudaway, now 70 years old, remembers being told, "That's the Eagle Ford. It will only last a week or so and quit producing." New technologies have changed that.

In 2006, Mark Papa, chief executive of Houston-based EOG Resources, steered the company toward expanding its acreage in shale formations with large oil deposits. The industry dogma at the time, Mr. Papa said in an interview, was that oil would not flow out of the shale like gas, because the molecules are bigger. "We said, 'We think that's incorrect, but let's let the industry continue to believe that,' " Mr. Papa said.

The rest of the industry wasn't far behind. More than 10 companies are now drilling for oil in the Eagle Ford, including companies like EOG and Chesapeake Energy Corp. that used to focus almost exclusively on natural gas, and industry giants like ConocoPhillips and BP PLC that are better known for drilling in far-flung fields overseas or in deep water. Indian conglomerate Reliance Industries Ltd. recently bought a \$1.3 billion stake in the field.

Shale formations like the Eagle Ford are attractive even to big international companies because they are faster and cheaper to drill than deep-water fields, and involve less regulation, said David Demshur, chief executive of Houston-based Core Laboratories.

The Deepwater Horizon drilling rig disaster in the Gulf of Mexico, which set off a massive oil spill on April 20, could spur even greater interest in onshore oil fields, as companies fear stricter rules and increased liability, said Bob Williams, director of news and analysis for the Land Rig Newsletter.

To be sure, natural-gas drilling in shale formations has increasingly drawn opposition from some environmental groups, who fear the process will pollute the air and contaminate drinking-water supplies—and that backlash could extend to shale-oil drilling. If state or federal regulators crack down on drilling operations, it could drive up costs for companies.

But here in south Texas, there has been little opposition, and the unexpected rise in economic activity has been welcomed.

Mr. Bordovsky, for one, couldn't be happier with ConocoPhillips, the company that drilled the well on his ranch. "They've been very, very super-good to me."

Chevron's boom: Its big buy proves Marcellus is no shaky venture
Sunday, November 14, 2010
Pittsburgh Post-Gazette

If you still believe that Marcellus Shale drilling is a fledgling Pennsylvania industry that could not withstand a severance tax, consider this number: 4.3 billion.

That's how many dollars Chevron Corp. says it will pay to acquire Atlas Energy Inc., a natural gas producer based in Moon that is active in tapping the Marcellus deposits. Chevron, of course, is the global energy company that acquired Pittsburgh's Gulf Oil in 1984 and last year had a net income of \$10.5 billion in sales and \$167 billion in other operating revenues.

You can be sure Chevron knows a good deal when it sees one.

Unfortunately, Gov.-elect Tom Corbett has promised no severance tax on Marcellus drilling, and we suspect the next session's Republican-dominated Legislature will go along. They should reconsider when they see the reality next year of the state's multibillion-dollar deficit.

Another test for the new administration will be Mr. Corbett's choice for DEP secretary. The Department of Environmental Protection is the chief state agency that oversees the impact of the gas drilling and, if the next governor is sincere about his pledge to develop this industry without degrading Pennsylvania's water and landscape, his choice for the post will speak volumes.

It is one thing for Mr. Corbett to choose an executive from the Marcellus gas drilling industry -- Christine Toretta, CEO of S.W. Jack Drilling Co. -- for his transition team. It would be something else to put a fox in charge of the DEP chicken coop. Even if he does believe this is a fledgling industry.

First published on November 14, 2010 at 12:00 am

Marcellus gas industry could take business away from Pittsburgh

By Andrew Conte
PITTSBURGH TRIBUNE-REVIEW
Monday, November 15, 2010

If Pittsburgh City Council doesn't want Marcellus shale gas companies drilling in the city, industry officials said they could take their non-drilling business elsewhere.

City Council plans to decide Tuesday whether to ban the drilling. The industry could move meetings such as recent conferences to the suburbs or friendlier towns, said Kathryn Klaber, president of the Marcellus Shale Coalition, an industry trade group based at Southpointe in Washington County.

"The city is doing its best in its portrayal of this industry to say, 'We don't want hotel and meeting spaces to be filled with this industry,' " Klaber said. "And my members are saying, 'Why would we go Downtown?' "

The coalition brought \$735,000 in direct spending to Pittsburgh in September with its first membership meeting, according to estimates by VisitPittsburgh. The group had several other smaller gatherings in the city.

It does not have any planned for Pittsburgh in 2011, Klaber said.

"That's a lot of money," said Craig Davis, VisitPittsburgh's vice president for sales and marketing.

Councilman Doug Shields, who proposed the drilling ban, said he's more worried about the health and environmental impacts of the gas industry than about money lost on conferences or meetings moved to the suburbs.

"That's their privilege," he said. "I don't know what else I am supposed to say. Should I say, 'We'll drop everything so you can meet in Pittsburgh?' "

The ban has little practical value, because no companies have active proposals to drill in the city, Klaber said. The group has no plans to challenge the ban in court either, she said.

"Passing a ban on drilling is just a bad precedent," said Matt Pitzarella, spokesman for Range Resources, a gas production company. "Clearly, it takes away property owners' rights, but it's also like the equivalent of banning Martian landings in the city: It could happen, but it's very unlikely."

Range Resources, a Texas company with local headquarters in Southpointe, 18 miles from Downtown, has spent about \$6 million in Pittsburgh during the past two years on events, hotel stays and other business, Pitzarella said. He added that colleagues throughout the industry have been sending e-mails in recent days about starting a boycott.

Others are not ready to give up on Pittsburgh, no matter the outcome of the vote.

Hart Energy, which hosted the largest shale conference ever at the David L. Lawrence Convention Center this month, said it booked two events next year. The latest one drew 2,600 people, with about half coming from outside the state, and it generated nearly \$3 million in direct spending, by VisitPittsburgh's estimate.

"Where are you going to get 2,600 people together for a conference in the suburbs of Pittsburgh?" spokesman Greg Salerno said. "Pittsburgh is still the best venue in the Marcellus area for a trade show."

Gas company EQT has an even bigger stake in the city, with its headquarters and 735 employees on Liberty Avenue, Downtown. Executives will follow City Council's vote, but it will not have a direct impact on the company, spokeswoman Karla Olsen said.

"We don't have any leases inside the city, so it's really a non-issue," she said.

Andrew Conte can be reached at andrewconte@tribweb.com or 412-320-7835.

----- Original Message -----

From: <cog-request@lists.earthworksaction.org>

To: <cog@lists.earthworksaction.org>

Sent: Sunday, November 14, 2010 9:57 PM

Subject: COG Digest, Vol 21, Issue 52

> Today's Topics:

>

> 1. How many water supplies have been impacted by gas drilling?

> Pa. doesn't keep count **Ex. 6 - Personal Privacy**

> 2. FW: Living on Earth: Natural gas industry says it does not

> need tax breaks. (Mall, Amy)

> 3. 60 minutes show on natural gas (Mall, Amy)

>

> Message: 1

> Date: Sun, 14 Nov 2010 21:50:44 +0000 (UTC)

> From: **Ex. 6 - Personal Privacy**

> To: cog@lists.earthworksaction.org

> Subject: [COG] How many water supplies have been impacted by gas

> drilling? Pa. doesn't keep count

> Message-ID:

> <449601080.1430695.1289771444527.JavaMail.root@cl04-host01.roch.ny.frontiernet.net>

>

> <http://thetimes-tribune.com/news/how-many-water-supplies-have-been-impacted-by-gas-drilling-pa-doesn-t-keep-count-1.1063683>

>

> How many water supplies have been impacted by gas drilling? Pa. doesn't keep count

> By Laura Legere (Staff Writer)

> Published: November 14, 2010

>

>

> Michael J. Mullen / Staff Photographer F. R. Place of Wyalusing stands by tanks used to supply water for the family farm, where the well water has been contaminated since Marcellus Shale gas drilling began.

> View Image Gallery for How many water supplies have been impacted by gas drilling? Pa. doesn't keep count Image Gallery for How many water supplies have been impacted by gas drilling? Pa. doesn't keep count

>

>

>

>

> Strengthened oil and gas regulations to be considered by a state review board this week will help answer an increasingly urgent question in the era of Marcellus Shale exploration: how many water supplies have been impacted by drilling activities?

>

> Right now, no one is keeping a complete count.

>

> The Oil and Gas Act does not require drillers to notify state regulators when landowners alert them that drinking water has been harmed by the companies' operations.

>

> Under current law, the Department of Environmental Protection must look into cases of potential drinking water pollution only when it is asked to investigate a problem by a landowner.

>

> The department also does not track how often gas drillers voluntarily replace drinking water supplies, either temporarily or permanently.

>

> "Often, homeowners and drillers work out agreements without needing the department's assistance," DEP spokesman Tom Rathbun said. "We get involved when we are notified of a problem, but we are not made aware of every case."

>

> A revised Oil and Gas Act will change that. When the new regulations go into effect, likely in January if they pass all

reviews, drillers will have to notify the department within 24 hours of receiving a complaint.

>

> An earlier draft of the revisions, which gave drillers 10 days to notify the department of a complaint, was changed after commentators on the regulations argued that was not quick enough.

>

> The change from no notification to nearly instantaneous notification signals an increasing awareness of how often drinking water complaints go uncounted at a time when everyone from farmers to the federal government is looking for more complete information on the short- and long-term impacts of gas drilling on water resources.

>

> Without the mandatory disclosure, critics say, voluntary arrangements can take advantage of the fact that there are disincentives for landowners to ask DEP to intervene: People may feel intimidated about pushing their complaints or fear causing any disruption to the gas companies that pay them royalties.

>

> On some occasions, gas companies, even when working side-by-side with regulators to address water complaints, have made clear efforts to keep voluntary water replacement arrangements out of the public eye.

>

> How many problems?

>

> There is a clear gap between the relatively small number of state orders for drillers to provide homes with replacement water and the visible proliferation of water tanks (called buffaloes), well vents, new wells, treatment systems and bottled water being delivered or installed in gas-drilling regions.

>

> After a records search in June 2009, DEP reported there had been fewer than 80 cases of groundwater contamination caused by oil and gas drilling in the state in more than 15 years, as measured by the number of official orders the agency sent to drillers to permanently restore or replace damaged water supplies.

>

> With 32,000 oil and gas wells drilled within that time span, that amounts to a .25 percent incident rate - a track record the industry frequently touts.

>

> But unofficial counts put the number of disturbed water supplies much higher.

>

> Daniel Farnham, an environmental engineer who has tested more than 2,000 water wells in Northeast and Northcentral Pennsylvania where Marcellus Shale drilling is under way, estimates as many as 50 homes in Bradford County alone are currently getting replacement water supplies provided by gas companies.

>

> In Susquehanna County, Dimock Twp. offers a vivid example of the gap between the officially determined size of the problem and the true number of drinking water supplies that have been replaced.

>

> DEP has ordered Cabot Oil and Gas Corp. to replace 18 water supplies - connected to 19 homes - that were tainted with methane the agency traced to faulty Cabot Marcellus Shale gas wells, a claim the company refutes.

>

> But according to Cabot documentation provided to the department as part of the order, at least 36 Dimock residences have at some point had water supplies replaced or remediated by Cabot at least temporarily.

>

> At the time Cabot provided DEP with its water replacement list, in June, the company had drilled 89 natural gas wells in and around Dimock - meaning Cabot remedied or replaced a water supply, on average, for more than one in every three gas wells it drilled.

>

> Cabot spokesman George Stark said the numbers reflect Cabot's policy of investigating all water supply complaints and "when we see the immediate need" providing replacement water during an investigation. Some complaints may turn out to be unfounded, unrelated to gas drilling, or temporary disruptions that clear up on their own, he said.

>

> Cabot, the most active driller in Susquehanna County, has removed nine homes from the list of 36 receiving water, Mr. Stark said. The company drilled one replacement water well and reconditioned three others. Five homes accepted

filtration systems that are in the process of being installed.

>

> Chesapeake Energy, the most active driller in Bradford County, did not answer a request to disclose the number of water supplies it has replaced or remediated.

>

> "Waiting to blow me up"

>

> Most drillers and many landowners say voluntary arrangements for solving residential water problems are amicable, even generous.

>

> Gary Lopez, a Dimock resident, wrote grateful letters to area newspapers thanking Cabot "for solving my water problems" by first delivering replacement water then drilling a new well after his old well "tested high for methane and barium."

>

> In the worst cases, though, homeowners have found gas company representatives bullying even as they appear to be helping to fix the problem.

>

> Sherry Vargson noticed her faucets began to sputter and blow what seemed like air after Chesapeake Energy performed what workers told her was a maintenance procedure on the gas wells yards from her Granville Summit home in June.

>

> A company contractor tested the head space in her water well and found elevated levels of methane. DEP tests a month later found the flammable gas present in her water supply at 56.3 mg/L - twice the level at which water can no longer hold the gas and releases it into the atmosphere or enclosed spaces, creating a risk of explosion.

>

> Because pre-drilling water tests "did not find the presence of the methane gas," DEP found that the tests indicated that gas well drilling caused the change in the water supply.

>

> Chesapeake has provided the Vargsons with bottled water since the day in June when the company detected the gas, but despite DEP recommendations that the company install a vent stack on the well to help keep the gas from concentrating, the well is still not vented.

>

> Instead, Chesapeake presented Mrs. Vargson with an agreement in July which required the family to release the company from all claims and liabilities related to the water up until that date in exchange for installing a vent "as a precautionary measure."

>

> The agreement, which the Vargsons refused to sign in its original form, also included a non-disclosure clause meant to bar the family from discussing the agreement, its terms or Chesapeake's role in providing a vent.

>

> In a statement, Chesapeake's senior director for corporate development, Brian Grove, said the company does not believe its activities affected the Vargson water well, which he said was "equipped with a venting cap predating our operations" because of "pre-existing methane." The company's pre- and post-drilling water tests show the water "virtually unchanged," he said - a position at odds with DEP findings reported Sept. 2.

>

> Whenever a question is raised about any water supply, Mr. Grove said, the company "routinely provides a temporary replacement source of water as a courtesy and notifies the DEP immediately while we begin to investigate" - a process that "most often" finds that the problem is not related to drilling activity, he added.

>

> The purpose of the legal agreements is to grant the company permission "to access the property and provide needed equipment or services" in cases where a lot of activity will be required in or near a home.

>

> "Confidentiality clauses are common in these and many other types of agreements," he said.

>

> Mrs. Vargson, who now sleeps with three windows open, is frustrated that the DEP has not enforced its finding

linking gas drilling to her water problems, which she is not afraid to discuss.

>

> Last week, she held a match to the sputtering water running from her kitchen faucet and a flame ran up the stream to the spout.

>

> "All of that is aerating in here," she said, "pocketing in the house, waiting to blow me up."

>

> About 20 miles across Bradford County, near Spring Lake, two Chesapeake-provided water buffaloes sit in the yard behind the more than 100-year-old farmhouse owned by Jacqueline Place.

>

> On April 1, nearly two weeks after the water to Ms. Place's home turned cloudy then dark brown and her sister's cows refused to drink it, a DEP inspector and Chesapeake contractors came to test the water. Chesapeake disconnected the well, filled the water buffaloes and plumbed them into the home - a project that took hours.

>

> At around 10 p.m., the last Chesapeake contractor handed Ms. Place a document and told her he would not flip the switch on the system he had just installed unless she signed it. According to her sister, Roslyn Bohlander, the contractor told Ms. Place the document was "nothing" important and, when pressed, told her it was a nondisclosure agreement.

>

> Ms. Place would not acknowledge the document or release it to The Times-Tribune.

>

> "It was such a crisis point," Mrs. Bohlander said. In the previous days, Ms. Place and her son had not used the water to shower, cook or clean dishes or clothes. They took sponge baths, Mrs. Bohlander said, and the cows, "they were just drinking enough to live."

>

> DEP and private tests have since shown elevated levels of methane and metals in the water.

>

> "They did all they had done to make it not be a bad situation," she said, "but then they said you can't have this water."

>

> Mr. Grove said Chesapeake does not believe its operations have affected the water supply and "have not caused any reduction of quality of the water in the well.

>

> "Repeated analyses have not detected any constituents related to natural gas drilling and production," he said.

>

> The company continues to provide replacement water to the Places and Bohlanders, like the Vargsons "as a courtesy," he said, "while we work with the DEP and residents to bring closure to these matters."

>

> Chesapeake has told the family on three occasions, each with between 24 and 48 hours notice, that it planned to take away the buffaloes and stop the water deliveries. DEP officials have told the family they cannot stop Chesapeake from taking the water because they did not order the company to provide the water in the first place, Ms. Place said.

>

> Mrs. Bohlander said the price of a buffalo and frequent water deliveries for the cows and the home is "unaffordable."

>

> "We no longer have a plan B," she said.

>

> Contact the writer: llegere@timeshamrock.com'60 Minutes' in Dimock

>

> Dimock residents will be featured on tonight's edition of "60 minutes" in a segment called "Shaleionaires" which will address both the economic benefits and environmental concerns about shale gas drilling. The show airs on CBS at 7 p.m.

>